

# Solar energy production by country





## Overview

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The worldwide growth of photovoltaics is extremely dynamic and varies strongly by country. In April 2022, the total global solar power capacity reached 1 TW, increasing to 2 TW in 2024. The top installers of 2024 included China, the United States, and India.

Many countries and territories have installed significant capacity into their electrical grids to supplement or provide an alternative to conventional sources. Solar power plants use one of two technologies: .

Many African countries receive on average a very high number of days per year of bright sunlight, especially the dry areas, which include the arid.

European deployment of has slowed down considerably since the record year of 2011. This is mainly due to the strong decline of new.

Canada near , , was in September 2010 the with an .

Solar photovoltaics (PV)The following table lists these data for each country:• Total.

Armenia due its geographical and climate properties is well-suited for the solar energy utilization. According to the .

A number of Pacific island states have committed to high percentages of renewable energy use, both to serve as an example to other countries and to cut the high costs of imported.

The top five countries are China, United States, India, Japan, and Germany, based on solar power generation and installed capacity. Emerging leaders include Brazil, Australia, and Spain, each advancing solar rapidly through innovative policies and investment.

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Many countries and territories have installed significant solar power capacity into their electrical grids to supplement or provide an alternative to conventional energy sources. Solar power plants use one of two technologies: Photovoltaic (PV) systems use solar panels, either on rooftops or in.

Solar power is clean, green, inexpensive, and renewable energy that is produced when sunlight strikes human-made solar cells and is subsequently converted into electricity. Solar power is effectively infinite in supply and can be generated at any point at which sunlight reaches the ground in every.

This dashboard ranks countries/areas to their renewable energy power capacity or electricity generation. The data can be further refined based on region, technology or year of interest.

The leader in solar energy is China, at 306,973 MW total solar capacity, but that's due to its colossal size; solar power accounts for only around 3.5% of total energy consumption. A more comprehensive way to rank countries by solar energy use is to examine the percentage of total power as well as.

The renewable power capacity data represents the maximum net generating capacity of power plants and other installations that use renewable energy sources to produce electricity. For most countries and technologies, the data reflects the capacity installed and connected at the end of the calendar.

Ember (2025); Energy Institute - Statistical Review of World Energy (2025) - with major processing by Our World in Data This dataset contains yearly electricity generation, capacity, emissions, import and demand data for over European countries. You can find more about Ember's methodology in this. Which country has the most solar power?

Germany, Europe's top solar power country, drives 41.1% of its electricity from renewables via the Energiewende. Adding 7.18 GW in 2023, it targets 137.88 GW by 2028, supported by auctions and residential solar. This 166 MW Brandenburg project powers 50,000 households.

What are the top 5 countries based on solar power?

The top five countries are China, United States, India, Japan, and Germany, based on solar power generation and installed capacity. Emerging leaders include Brazil, Australia, and Spain, each advancing solar rapidly through innovative policies and investment.

How much solar power will the world produce in 2025?



In 2025, solar power is the cornerstone of the global energy transition, with photovoltaic (PV) systems generating over 2,000 terawatt-hours (TWh) in 2024, or 6.9% of global electricity, per Ember's Global Electricity Review 2025. Doubling from 1 TW in 2022 to 2 TW in 2024, solar capacity is skyrocketing, led by the top solar power countries.

Which countries use photovoltaics & concentrated solar power?

The United States conducted much early research in photovoltaics and concentrated solar power and is among the top countries in the world in deploying the technology, being home to 4 of the 10 largest utility-scale photovoltaic power stations in the world as of 2017.

Which countries use solar power in 2022?

In April 2022, the total global solar power capacity reached 1 TW, increasing to 2 TW in 2024. The top installers of 2024 included China, the United States, and India. The following table lists these data for each country: Total generation from solar in terawatt-hours. Percent of that country's generation that was solar.

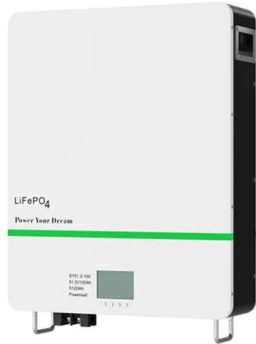
How much solar energy does each country produce?

It is followed by the United States at 139,205 MW and Japan at 89,077 MW. However, total capacity is only one way to view solar production. Another method is to examine solar penetration—that is, the percentage of each country's total energy consumption that comes from its solar installations.



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### [Solar Photovoltaic Power Potential by Country](#)

The potential for clean, carbon-free electricity generation from solar photovoltaic (PV) sources in most countries dwarfs their current electricity demand. Around 20% of the global population lives in 70 countries boasting excellent conditions ...

### Top-10 solar energy producing countries in the world: ...

Top-10 solar energy producing countries in the world: Details inside. In the global effort to combat climate change and transition to cleaner energy sources, solar power is emerging as a leading solution. As nations ...

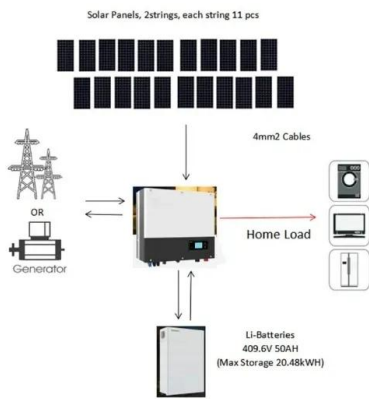


### [Top Solar Power Countries in 2025: Leading the ...](#)

The top five countries are China, United States, India, Japan, and Germany, based on solar power generation and installed capacity. Emerging leaders include Brazil, Australia, and Spain, each advancing solar rapidly ...

### [Electricity production by source, World](#)

Share of total energy used in agriculture and forestry  
Share with access to electricity vs. per capita energy consumption  
Solar (photovoltaic) panel prices  
Solar (photovoltaic) panel prices vs. cumulative capacity  
Solar (photovoltaic) ...



### 35 Latest Solar Power Statistics, Charts & Data [2025] ...

Solar power is an energy source that has been around for quite some time. It's only recently, however, that people have begun to truly understand the potential of this energy source and how it can help the world transition ...

### Top 10 nations with the most solar power installed in ...

When breaking down the figures by country, as reflected by Irena (International Renewable Energy Agency) in its report Renewable Capacity Statistics 2024, China, USA, Japan, Germany, India, Brazil, Australia, Spain, ...



### [Top Solar Power Countries in 2025: Leading the ...](#)

Explore the top solar power countries in 2025, including China, the U.S., India, Japan, and Germany, plus emerging leaders like Brazil and Australia, driving the global shift to sustainable energy with innovative projects ...





### [Ranked: The 15 Countries With the Most Solar Power ...](#)

Solar energy capacity is growing rapidly, driving the global transition to renewable energy. This graphic visualizes the top 15 countries by cumulative megawatts of installed photovoltaic (PV) and concentrated solar ...



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